Simple notes on the periodic table

The **Periodic Table** shows the atoms in order of atomic number. One was developed by Dimitri Mendeleev.

GROUP	I	II											III	IV	V	VI	VII	VIII	Number of elements per row
	1+	2+											3+	0	3- (5+)	2- (6+)	1- (7+)	0	
PERIOD 1	$_{1}H$																	$_{2}He$	2
2	$_{3}Li$	$_{4}Be$											$_{5}B$	$_{6}C$	$_{7}N$	$_{8}O$	$_{9}F$	$_{10}Ne$	8
3	$_{11}Na$	$_{12}Mg$	T r a n s i t i o n M e t a l s (most form 2+ cations)										$_{13}Al$	$_{14}Si$	$_{15}P$	$_{16}S$	$_{17}Cl$	$_{18}Ar$	8*
4	$_{19}K$	$_{20}Ca$	$_{21}Sc$	$_{22}Ti$	$_{23}V$	$_{24}Cr$	$_{25}Mn$	$_{26}Fe$	$_{27}Co$	$_{28}Ni$	$_{29}Cu$	$_{30}Zn$	$_{31}Ga$	$_{32}Ge$	$_{33}As$	$_{34}Se$	$_{35}Br$	$_{36}Kr$	8^+10*
5	$_{37}Rb$	$_{38}Sr$	$_{39}Y$	$_{40}Zr$	$_{41}Nb$	$_{42}Mo$	$_{43}Tc$	$_{44}Ru$	$_{45}Rh$	$_{46}Pd$	$_{47}Ag$	$_{48}Cd$	$_{49}In$	$_{50}Sn$	$_{51}Sb$	$_{52}Te$	$_{53}I$	$_{54}Xe$	$8^{\#}$+10^

<-------- Metals

----> Non Metals

An **Element** is a substance with only 1 type of atom. eg. Mg but not $MgCl_2$. O_2 but not H_2O.

A **Compound** is defined as a substance with more than 1 type of atom chemically bonded together. eg. H_2O.

A **Mixture** is defined as a substance with more than 1 type of atom which are not chemically joined. eg. Air.

The vertical **Group** numbers determine the number of outershell _____ and the chemical properties.

The horizontal **Rows** or **Periods** refer the last shell(s) being filled by the atom's electrons.

eg. Hydrogen and Helium are in row 1 so the electrons of these elements occupy the 1st. shell.

The elements to the left of the steps are **Metals** that prefer to form cations (+ ions) if they react because they prefer to lose the small number of outershell electrons they possess. Mg will react to form Mg^{2+}.

Group I elements are called **Earth Metals** while Group II elements are called **Alkali Earth Metals**.

Elements on the right side of the steps are **Non Metals** (Hydrogen is also a non metal). They can share some of their outershell e^- or form anions when they react because they want to attract more electrons to fill their outershell – The electron attraction power of an atom is called its **Electronegativity**. Non metals have high electronegativity and attract e^- from elements with low electronegativity such as Metals which prefer to lose e^-.

Group _____ elements are called **Halogens**.

Group VIII elements or **Inert** or **Noble** gases do not react as their outershell is full so they exist as single atoms.

Metals occur as single atoms (eg. Na) while non metals usually occur as **Diatomic** molecules (eg. _____).

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